WHAT IS CLAIMED IS:

1. A system for forming images for display in a vehicle, comprising:

a lens system directing energy from a scene toward a detector;

a display unit coupled to the detector, the display unit forming an image using information received from the detector;

the detector including an array of detector elements, each detector element receiving energy from a portion of the scene and converting the received energy into information representative of the received energy, the detector sending the information associated with at least some of the detector elements to the display unit; and

a computer coupled to the detector, the computer receiving heading information, selecting the detector elements that should be used to form an image based on the heading information, and instructing the detector which detector elements should have their associated information sent to the display unit.

2. The system of Claim 1, wherein the energy directed by the lens system toward each detector element has a size of approximately one and three-tenths milliradians.

3. The system of Claim 1, wherein the lens system comprises an objective lens having a diameter of one and one-half inches, an effective focal length of one and one-half inches, and an optical speed of f/1.

4. The system of Claim 1, wherein the display unit comprises a head-up display.

5. The system of Claim 4, wherein the head-up display includes a liquid crystal display and an aspheric mirror.

6. The system of Claim 1, wherein the scene is greater than twelve degrees in width by four degrees in height.

7. The system of Claim 1, wherein the scene is approximately twenty four degrees in width by eighteen degrees in height.

8. The system of Claim 1, wherein the detector is an uncooled pyroelectric barium strontium titanate detector.

9. The system of Claim 1, wherein the detector uses an interpolation scheme on the information to be sent to the display unit to produce additional information to be used in forming the image.

10. The system of Claim 1, further comprising a sensor determining heading information of the vehicle, the sensor coupled to the computer so that the computer receives the heading information from the sensor.

11. The system of Claim 10, wherein the sensor determines the steering angle of the vehicle.

12. The system of Claim 11, wherein the sensor is an angle encoder coupled to the steering column of the vehicle.

13. The system of Claim 10, wherein the computer examines the heading information from the sensor at a rate of approximately sixty times per second.

14. The system of Claim 1, wherein the computer receives the information associated with at least some of the detector elements to receive heading information and processes the information using image processing software to determine the geometry of the roadway to select the detector elements that should be used to form an image based on the heading information.

15. The system of Claim 1, wherein the detector, based on the information from the computer, sends the information associated with only some of the detector elements to the display unit by fast clocking through the detector elements that should not have their information sent to the display unit.

16. A method for forming images for display in a vehicle, comprising:

directing energy from a scene toward a detector;

receiving the energy from a portion of the scene at each of a plurality of detector elements;

converting the energy received at each detector element into information representative of the received energy;

determining heading information of the vehicle;

selecting the detector elements that should be used to form an image based on the heading information; and

forming the image using the information associated with the selected detector elements.

17. The method of Claim 16, wherein the energy directed toward each detector element has a size of approximately one and three-tenths milliradians.

18. The method of Claim 16, further comprising displaying the image in a head-up display.

19. The method of Claim 18, wherein the image is projected from a liquid crystal display onto an aspheric mirror to form the head-up display.

20. The method of Claim 16, wherein the scene is greater than twelve degrees in width by four degrees in height.

21. The method of Claim 16, wherein the scene is approximately twenty four degrees in width by eighteen degrees in height.

22. The method of Claim 16, wherein the detector is an uncooled pyroelectric barium strontium titanate detector.

23. The method of Claim 16, further comprising interpolating the information associated with the selected detector elements to produce additional information to be used in forming the image.

24. The method of Claim 16, wherein the heading information is the steering angle of the vehicle.

25. The method of Claim 24, wherein the steering angle of the vehicle is determined using an angle encoder coupled to the steering column of the vehicle.

26. The method of Claim 16, wherein determining heading information of the vehicle comprises processing information from at least some of the detector elements to determine the direction of the roadway.

27. The method of Claim 16, wherein determining the heading information of the vehicle occurs at a rate of approximately sixty times per second.

28. The method of Claim 16, further comprising fast clocking through the detector elements that should not have their information used to form the image to produce the information to be used to form the image.